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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,225	03/09/2004	Takahisa Mizuta	51735/P849	2704

23363 7590 07/10/2007
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EXAMINER	
DHARIA, PRABODH M	

ART UNIT	PAPER NUMBER
2629	

MAIL DATE	DELIVERY MODE
07/10/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/796,225	MIZUTA, TAKAHISA	
	Examiner	Art Unit	
	Prabodh M. Dharia	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 May 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19,21-32 and 34* is/are pending in the application.

4a) Of the above claim(s) *20 and 33* is/are withdrawn from consideration.

5)☒ Claim(s) *1-19 and 21-27* is/are allowed.

6)☒ Claim(s) *28-32 and 34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1. **Status:** Please all replies and correspondence should be addressed to examiner's new art unit 2629. Receipt is acknowledged of papers submitted on 05-24-2007 under amendments and request for reconsideration, which have been placed of record in the file. Claims 1-19, 21-32 and 34 are pending in this action. Claims 20 and 33 are cancelled.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 32 and 34 are rejected under 35 U.S.C. 102(e) as being anticipated by Makino (US 2002/0067127 A1).

Regarding Claim 32, Makino teaches a plasma display panel comprising: a first substrate and a second substrate; a plurality of first electrodes and second electrodes formed in parallel on the first substrate; a plurality of third electrodes crossing the first and second electrodes and being formed on the second substrate; and a driving circuit for sustaining a plurality of discharge cells formed by adjacent first electrodes, second electrodes, and third electrodes, wherein a frequency of the sustain pulse supplied for sustaining the discharge cell in the driving circuit is greater than 500 KHz (pages 3 and 4, paragraphs 43-47, page 3, paragraph 37 teaches depending

on the gas mixture of PDP the sustain frequency can be several mega hertz, i.e. the range of 500Khz to 1Mhz is achievable).

Regarding Claim 34, Homma teaches the frequency has a range from 700 KHz to 1 MHz (page 3, paragraph 37 teaches depending on the gas mixture of PDP the sustain frequency can be several mega hertz, i.e. the range of 500Khz to 1Mhz is achievable).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Higashino et al. (US 7,030,839 B2) as in view of Okada Taku ((US 2002/0033677 A1).

Regarding Claim 28, Higashino et al. teaches a plasma display panel driving method by forming wall charges at a discharge cell to be selected from among a plurality of discharge cells, and discharging the selected discharge cell, comprising: applying a setup pulse for forming a first space charge at a selected discharge cell to the discharge cell; and establishing the first space charge formed by the setup pulse as a priming element, and applying a sustain pulse with a

voltage level of a range for discharging the selected discharge cell to the discharge cell (Page 3, Paragraphs 33-36).

However, Higashino fails to specifically disclose applying a setup pulse for forming a first space charge at a selected discharge cell to the discharge cell; and establishing the first space charge formed by the setup pulse as a priming element.

However, Okada Taku discloses applying a setup pulse for forming a first space charge at a selected discharge cell to the discharge cell; and establishing the first space charge formed by the setup pulse as a priming element (page 2, paragraph 25, page 7, paragraph 128-130).

The reason to combine through setup pulse not only establishes first space charge but also increases priming effect which stabilizes write discharge.

Thus it would have been obvious to one in the ordinary skill in the art at the time of invention was made to incorporate the teaching of Okada Taku in the teaching of Higashino et al. to be able to have a PDP or plasma display panel operating with setup pulse to stabilize write operation and thereby produce superior quality picture.

Regarding Claim 29, Higashino et al. teaches the sustain pulse has a width of a range for forming a second space charge after the selected discharge cell is discharged by the sustain pulse, and the second space charge formed by the sustain pulse is set as a priming element, a level of the sustain pulse is converted, and the level-converted sustain pulse is applied to the discharge cell within a range where the second space charges remain so that the selected discharge cell may be discharged (page 1, paragraph 2, Col. 3, paragraphs 33-36).

6. Claims 30,and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Homma (US 2003/0141824 A1) in view of Tokunaga Tsutomu et al. (US 6,900,782 B2).

Regarding Claim 30, Homma teaches a plasma display panel driving (page 7, paragraph 107, Lines 1,2) method by dividing a frame for realizing video signals into a plurality of subfields (page 7, paragraph 107, Lines 1-7), the plasma display panel including a plurality of discharge cells (page 7, paragraph 100, Lines 1-9), wherein a subfield includes an address period for forming wall charges at a discharge cell to be selected from among the discharge cells (page 10, paragraph 155), and a sustain period for sustaining the selected discharge cell (page 10, paragraph 167) without using a memory function (page 1, paragraph 5,Lines 10-13, the method comprising: in the sustain period: applying a pulse for discharging the selected discharge cell during the address period; and establishing the discharge as priming, and applying a sustain pulse for alternately sustaining the discharge cell (page 10, paragraphs 164-168).

However, Homma fails to disclose the method comprising: in the sustain period: applying a pulse for discharging the selected discharge cell during the address period; and establishing the discharge as priming, and applying a sustain pulse for alternately sustaining the discharge cell.

However, Tokunaga Tsutomu et al. discloses the method comprising: in the sustain period: applying a pulse for discharging the selected discharge cell during the address period; and establishing the discharge as priming, and applying a sustain pulse for alternately sustaining the discharge cell (Col. 7, lines 63 to Col. 8, Line 48, Col. 9, Line 61 to Col. 10, Line 13, Col. 10, lines 25-35).

The reason to combine after the priming discharge applying sustaining pulse to sustain discharge continuously and insuring stable discharge.

Thus it would have been obvious to one in the ordinary skill in the art at the time of invention was made to incorporate the teaching of Tokunaga Tsutomu et al. in the teaching of Homma to be able to have a PDP or plasma display panel after the priming discharge applying sustaining pulse to sustain discharge to stabilize sustain discharge and thereby produce superior quality picture.

7. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Homma (US 2003/0141824 A1) in view of Tokunaga Tsutomu et al. (US 6,900,782 B2) as applied to claim30 above, and further in view of Seguin, Alexis (US 2004/0027317 A1).

Regarding Claim 31, Homma modified by Tokunaga Tsutomu et al. fails to disclose an address period of a next subfield follows the sustain period of a subfield.

However, Seguin discloses an address period of a next subfield follows the sustain period of a subfield (page 3, paragraph 39).

The reason to combine by arranging addressing follows sustain period to reduce dead time between sustain period and addressing period for next sub-field such that produce precise brightness gradation (page 3, paragraph 39, page 1, paragraph 8).

Thus it would have been obvious to one in the ordinary skill in the art at the time of invention was made to incorporate the teaching of in the teaching of Homma modified by Tokunaga Tsutomu et al. to be able to have a PDP or plasma display panel operating with

specific method of addressing period to achieve precise brightness that reduces contouring defects.

Response to Arguments

8. Applicant's arguments, see remarks, filed 05-24-2007, with respect to claims 1,19 have been fully considered and are persuasive. The non-final rejection mailed on 03-16-2007 has been withdrawn.

9. Applicant's arguments, see remark, filed 05-24-2007, with respect to the rejection(s) of claim(s) 28 under 35 U.S.C. 102(e) as being anticipated by Higashino et al. (US 7,030,839 B2) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made Higashino et al. (US 7,030,839 B2) in view of Okada Taku ((US 2002/0033677 A1).

10. Applicant's arguments, see remark, filed 05-24-2007, with respect to the rejection(s) of claim(s) 30 and 31 under 35 U.S.C. 102(e) as being anticipated by Homma (US 2003/0141824 A1) have been fully considered and are persuasive. However, the claim limitations are not clear or clarify by a separate drawing showing proper sequence and its utilities. However, Homma does not anticipate as per arguments. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made Homma (US 2003/0141824 A1) in view of Tokunaga Tsutomu et al. (US 6,900,782 B2) as applied to claim30 above, and further in view of Seguin, Alexis (US 2004/0027317 A1).

11. Applicant's arguments filed 05-24-2007 have been fully considered about claims 32 and 34 but they are not persuasive.

Applicant argues Makino, while providing for a drive frequency of 100kHz (paragraph [0014]) and several MHz (paragraph [0037]), does not provide the disclosed range with sufficient specificity to constitute an anticipation of the above limitation. The present patent application discloses that the requisite sustain voltage decreases at a sustain pulse frequency greater than 500kHz (see Fig. 14) and that the efficacy is maximized at a sustain pulse frequency between 500kHz and 1MHz (see Fig. 16) due to electromagnetic interference. Given these unexpected results within the claimed narrow range, it is reasonable to conclude that the narrow range is not disclosed with sufficient specificity in Makino.

Examiner disagrees as none of the independent claim recites the argument "that the efficacy is maximized at a sustain pulse frequency between 500kHz and 1MHz (see Fig. 16) due to electromagnetic interference" and Makino does disclose recited range of 500Khz to 1Mhz. (it is well known in the art for sustain pulse frequency to be 1Khz to 1Mhz see Van Heusden, Sybrandus et al. (US 2002/0014846 A1)).

Allowable Subject Matter

12. Claims 1-27 are allowed.

13. The following is an examiner's statement of reasons for allowance:

As argued by applicant in remarks under claim rejection page 11,12 and page 13, last two paragraphs and page 14 the prior art of Higashino et al. (US 7,030,839 B2), Okada Taku ((US 2002/0033677 A1), Homma (US 2003/0141824 A1), Tokunaga Tsutomu et al. (US 6,900,782 B2), Seguin, Alexis (US 2004/0027317 A1) fails to recite or disclose the uniquely distinct features of the independent claims limitations below with all the other limitations recited in independent claims:

a single subfield includes an address period for forming wall charges at a discharge cell to be selected from among the discharge cells, and a sustain period for discharging the selected cell, the method comprising: in the sustain period: applying a first pulse to a second electrode of the plurality of second electrodes while a first electrode of the plurality of first electrodes is established at a first voltage; and alternately applying to the first electrodes and the second electrodes a sustain pulse with a second voltage defined by a voltage difference between the first electrodes and the second electrodes, wherein the second voltage is less than a voltage difference between the first pulse and the first voltage.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Nagao, Nobuaki (US 2004/0021622 A1) Plasma display panel driving method and plasma display panel apparatus capable of displaying high-quality images with high luminous efficiency.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prabodh M. Dharia whose telephone number is 571-272-7668. The examiner can normally be reached on M-F 8AM to 5PM.

16. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

17. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any response to this action should be mailed to:

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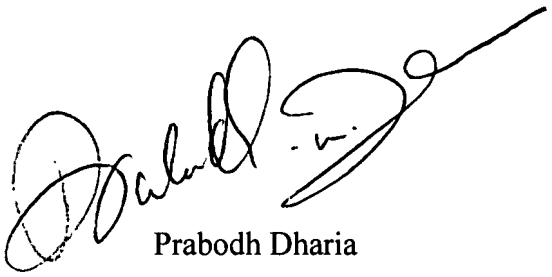

Prabodh Dharia

Partial Signatory Authority

AU 2629

June 25, 2007